

**WHAT IS CLAIMED IS:**

1. An automatic gain control apparatus, comprising:

a first input for receiving from a communication receiver information indicative of signal strength of a received communication signal; and

5 hardware coupled to said first input and responsive to said signal strength information for determining an automatic gain control setting for the communication receiver without incurring program execution delay of a data processor.

2. The apparatus of Claim 1, wherein the communication receiver is an RF  
10 receiver.

3. The apparatus of Claim 1, wherein said signal strength information includes an RSSI signal.

15 4. The apparatus of Claim 3, wherein said RSSI signal is an RSSI signal from an amplifier portion of the communication receiver.

5. The apparatus of Claim 1, including a second input for receiving information indicative of a desired bias level of an amplifier of the communication  
20 receiver, said hardware coupled to said second input and also responsive to said bias level information for determining the automatic gain control setting without incurring program execution delay of a data processor.

6. The apparatus of Claim 5, wherein said hardware includes difference circuitry responsive to said bias level information and said signal strength information for determining therefrom a deviation value indicative of a difference between said bias level and said signal strength..

7. The apparatus of Claim 6, wherein said hardware includes range checking circuitry coupled to said difference circuitry for determining whether the deviation value is within a predetermined range.

8. The apparatus of Claim 6, wherein said hardware includes filter gain circuitry coupled to said difference circuitry for determining in response to said deviation value a filter gain for a channel filter of the communication receiver.

9. The apparatus of Claim 8, wherein said hardware includes an output coupled to said filter gain circuitry for outputting to the communication receiver information indicative of said filter gain.

10. The apparatus of Claim 8, including a third input for receiving information indicative of a gain value selected for an LNA of the communication receiver, said hardware coupled to said third input and also responsive to said LNA gain value for

determining said automatic gain control setting without incurring program execution delay of a data processor.

11. The apparatus of Claim 10, wherein said hardware includes a summing  
5 circuit coupled to said third input and said filter gain circuitry for adding said filter gain value to said LNA gain value to produce a total gain value.

12. The apparatus of Claim 11, wherein said hardware includes a range  
10 checking circuit coupled to said summing circuit for detecting whether said total gain value has reached a predetermined gain limit value.

13. The apparatus of Claim 12, wherein said range checking circuit is further  
operable for detecting whether said total gain value has reached either of an upper gain limit or a lower gain limit.

14. The apparatus of Claim 1, including a second input for receiving  
information indicative of a predetermined power level value, said hardware coupled to  
said second input and also responsive to said power level information for determining  
said automatic gain control setting without incurring program execution delay of a data  
20 processor.

15. The apparatus of Claim 14, wherein said predetermined power level value is a threshold value, and wherein said hardware includes compare circuitry for comparing said threshold value with an estimated total power of the communication receiver to select an LNA gain setting for the communication receiver.

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16. The apparatus of Claim 15, including an output coupled to said compare circuitry and responsive thereto for outputting to the communication receiver information indicative of the selected LNA gain.

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17. The apparatus of Claim 1, including a second input for receiving information indicative of a gain value selected for an LNA of the communication receiver, said hardware coupled to said second input and also responsive to said LNA gain value for determining said automatic gain control setting without incurring program execution delay of a data processor.

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18. The apparatus of Claim 17, including a third input for receiving information indicative of a further gain value selected for the LNA of the communication receiver, said hardware coupled to said third input and also selectively responsive to one of said LNA gain values for determining said automatic gain control setting without incurring program execution delay of a data processor.

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19. A communication receiver apparatus, comprising:

a receiver portion for receiving and processing communication signals;

and

a control portion for determining an automatic gain control setting for said

5 receiver portion, said control portion including a first input coupled to said receiver  
portion for receiving therefrom information indicative of signal strength of a received  
communication signal, said control portion further including hardware coupled to said  
first input and responsive to said signal strength information for determining said  
automatic gain control setting without incurring program execution delay of a data  
10 processor.

20. The apparatus of Claim 19, provided as an RF communication receiver  
apparatus.

15 21. The apparatus of Claim 19, wherein said signal strength information  
includes an RSSI signal.

22. The apparatus of Claim 21, wherein said receiver portion includes an  
amplifier which produces said RSSI signal.

20 23. The apparatus of Claim 19, wherein said control portion includes a second  
input for receiving information indicative of a desired bias level of an amplifier of the

communication receiver, said hardware coupled to said second input and also responsive to said bias level information for determining the automatic gain control setting without incurring program execution delay of a data processor.

5           24.     The apparatus of Claim 19, wherein said control portion includes a second input for receiving information indicative of a predetermined power level value, said hardware coupled to said second input and also responsive to said power level information for determining said automatic gain control setting without incurring program execution delay of a data processor.

10           25.     The apparatus of Claim 19, wherein said control portion includes a second input for receiving information indicative of a gain value selected for an LNA of the communication receiver, said hardware coupled to said second input and also responsive to said LNA gain value for determining said automatic gain control setting without  
15     incurring program execution delay of a data processor.

26.     An automatic gain control method, comprising:  
          providing information indicative of signal strength of a communication signal received by a communication receiver; and  
20           responsive to said signal strength information, determining an automatic gain control setting for the communication receiver without incurring program execution delay of a data processor.

27. The method of Claim 26, including performing said determining step also in response to information indicative of a desired bias level of an amplifier of the communication receiver.

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28. The method of Claim 26, including performing said determining step also in response to information indicative of a predetermined power level value.

29. The method of Claim 26, including performing said determining step also in response to information indicative of a gain value selected for an LNA of the communication receiver.

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